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DRAWINGS ATTACHED

1 288 461

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A4J 211 415

(54) IMPROVEMENTS IN AND RELATING TO CHAIRS

(71) I, PETER HOYTE, a British Subject, of Trading Estate, Farnham, Surrey, England, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed to be particularly described in and by the following statement:—

The present invention relates to "sling" type chairs, such chairs comprising a chair frame part of which forms a base for the support of the chair on the ground the remainder of the frame forming a framework for the support of a sling of fabric plastics or other material which provides the support means for the user. The sling may itself be upholstered but more usually receives cushions or a mattress.

The invention has for an object to provide a "sling" type chair the chair frame of which is constructed so that the same can be dismantled whereby storage of the chair when not required for use or transportation of a chair or number of chairs is considerably facilitated.

Thus according to the invention, a sling type chair comprises a knock-down chair frame consisting of four frame members and a four arm spider, each said frame member being of substantially *L* form and adapted to be slidably connected to an arm of the spider whereby the said frame members are disposed in substantially cruciform arrangement with a limb of each frame member and the spider forming the base part of the chair frame the limbs of two of the frame members being at the rear of the chair frame the other limbs of the remaining two frame members being at the front of the chair frame the limbs at the rear of the chair and those at the front of the chair being connected together respectively by a transverse member and a sling extending between the transverse members said sling having a transversely extending pocket at each end, each pocket receiving one of the transverse members.

The frame members and/or the spider arms can be tubular, of any desired shape in cross-section, assembly being effected by slidably inserting adjacent ends of the spider arms and frame member ends one into the other. Alternatively the frame members and/or the spider arms can be of channel section the channels being formed so that tilting of the slidably engaged frame members and spider arms cannot take place. For example the open side of the channel can have an inturned flange extending along the lengthwise edge or edges of the open side of the channel.

Embodiments of the invention will now be described by way of example with reference to the accompanying drawings in which:—

Figure 1 is an exploded perspective view of a chair according to one embodiment,

Figure 2 is a side view,

Figure 3 is a view on the line III-III in Figure 2,

Figure 4 is a fragmentary view of an alternative form of spider,

Figure 5 shows the chair dismantled, and

Figure 6 is a perspective view of a chair according to a further embodiment.

Referring to the drawings, the chair frame is constructed from four frame members 1, 2, 3 and 4 respectively and a four arm spider 5. Each frame member is in the form of an *L* and made from metal tube which can be polished, plated for example chromium plated, stove enamelled or covered with plastics. The vertical limb of each frame member extends outwardly at an angle to the horizontal limbs thereof, the two frame members 1, 2 each having a vertical limb of greater length than the vertical limb of each of the two other frame members 3, 4. The four arms of the spider 5 are disposed at right angles to one another and it is in one piece. The spider can for example consist

simply of four pieces of metal tube of equal length and each forming an arm, adjacent ends of the tubes in the central region of the spider being welded together. The outside diameter of the metal tube forming the spider arms is such that each arm can be slidably inserted in the frame members.

The chair frame is assembled by slidably inserting a spider arm into the end of the horizontal limb of each frame member 1, 2, 3 and 4, the frame members being arranged so that the frame members 1, 2 with the longer limbs extend outwardly on one side of the spider the remaining two frame members 3, 4 extending outwardly on the other side of the spider. The horizontal limbs of the frame members and the spider thus form together the base portion of the chair frame, the vertical limbs of longer length of the frame members 1, 2 being disposed at the rear of the chair frame and the shorter vertical limbs of the frame members 3, 4 at the front of the chair. The two vertical limbs at the front of the chair are interconnected with one another at their upper ends by a transverse member 6 the vertical limbs at the rear of the chair being similarly interconnected by a second transverse member 7. Each transverse member 6, 7 consists of a length of metal tube each of which has adjacent its opposite ends a tubular socket 8, the sockets extending radially from the tube. The transverse members 6, 7 are assembled by inserting the upper end of each vertical limb of the frame members in the sockets 8 of the appropriate transverse member. The frame members are thereby secured to provide a rigid frame structure. The ends of the transverse members 6, 7 are advantageously closed by plugs 9 of plastics or other suitable material.

The chair "sling" 10 is attached to the transverse members and consists of a rectangular sheet of for example a fabric or plastics material. The sling is rectangular and has a transverse pocket 11 at each end, the sling being attached to each said member by sliding the same through the appropriate pocket. The length of the sling is such that the same assumes a curved form when assembled. The chair is completed by the addition of cushions, or a mattress 12 on the sling.

As shown in Figure 5 the chair frame when dismantled will be of small bulk thus facilitating transport and storage.

The further embodiment shown in Figure 6 is generally similar to the first described embodiment and accordingly the same reference numerals are used to indicate corresponding parts.

In figure 6, the chair frame comprises the four frame members 1, 2, 3 and 4 interconnected in the base of the frame by a four-arm spider 5, which is constructed as shown in Figure 4. In this embodiment however the transverse members 15, 16 interconnecting respectively the frame members 1, 2 and the frame members 3, 4 are each of *U* form, the limbs of each *U* and the corresponding frame members being coupled together by a sleeve or other coupling member 17 each of which can be a separate component slidably engageable in the bores of the frame member and transverse member or can be secured in the bore of one of said members and a sliding fit in the other to permit the frame to be dismantled or assembled. The limbs of each *U* formed transverse member 15, 16 are curved where they merge into the connecting portion.

If desired releasable locking means can be provided for the temporary securing of the members of the frame structure when assembled. Such means can for example comprise spring loaded catches or locking screws. If desired each frame member can itself be constructed from separate parts. For example in the chair frame described in the above particular embodiment the limbs of each *L* formed frame member can be formed separately from one another the separate pieces being interconnected with one another to construct the frame member. Similarly the spider can be formed from separate parts which can be assembled together. For example, the spider can comprise a hub or boss to which the arms are attachable. The hub or boss can have tapped holes each to receive the threaded end of an arm. Alternatively the arms can be plain so as to be slidably insertable in plain holes in the hub or boss. Still further, the spider can be constructed so that the spider arms are angularly adjustable in relation to one another. For this purpose for example, the spider can comprise a hub or boss having a centrally disposed spigot, the spigot receiving an apertured end of each arm so that the arms are swingable about the spigot. Alternatively and as shown in Figure 4 a coupling member or spider 5 can be constructed the arms of which are each provided at one end with a circular boss 13 having an aperture, the bosses lying one on the other with the apertures registering with one another when the arms are assembled, the aligned apertures receiving a socket head screw 14 the arms being clamped together by the screw. According to a further alternative construction the frame members are solid, the spider having tubular arms.

WHAT I CLAIM IS:—

1. A sling type chair comprising a knock-down chair frame consisting of four frame members and a four arm spider, each said frame member being of substantially *L* form and adapted to be slidably connected to an arm of the spider whereby the said frame members are disposed in substantially

cruciform arrangement with a limb of each frame member and the spider forming the base part of the chair frame, the limbs of two of the frame members being at the rear of the chair frame the other limbs of the remaining two frame members being at the front of the chair frame the limbs at the rear of the chair and those at the front of the chair being connected together respectively by a transverse member and a sling extending between the transverse members, said sling having a transversely extending pocket at each end, each pocket receiving one of the transverse members.

2. A sling type chair according to claim 1 wherein the frame members are tubular.

3. A sling type chair according to claim 1 or 2 wherein the spider has tubular arms.

4. A sling type chair according to claim 1, or 3 wherein the frame members are solid.

5. A sling type chair according to claim 1, or 2 wherein the spider has solid arms.

6. A sling type chair according to claim 1, 2 or 3 wherein the frame members and/or arms of the spider are of channel section the channels being formed so that tilting of the slidably engaged frame members and arms of the coupling member or spider is avoided.

7. A sling type chair according to claim 6 wherein the open side of the channel has an inturned flange extending along the lengthwise edge or each edge thereof.

8. A sling type chair according to any one of the preceding claims wherein each frame member is of one piece construction.

9. A sling type chair according to any one of claims 1 to 7 wherein each frame member comprises separate limbs adapted to be interconnected with one another to form a frame member.

10. A sling type chair according to any one of the preceding claims wherein the spider is of one piece construction.

11. A sling type chair according to any one of claims 1 to 9 wherein the spider comprises arms formed separate from one another and connected together to form the spider.

12. A sling type chair according to claim 11 wherein the spider comprises a hub or boss having arms extending radially outwards therefrom the arms being detachable from the hub or boss.

13. A sling type chair according to claim 11 wherein the spider has arms which are angularly adjustable relative to one another.

14. A sling type chair according to claim 13 wherein the spider comprises a hub or boss having a centrally disposed spigot, the spigot receiving an apertured end of each arm so that the arms are swingable about the spigot.

15. A sling type chair according to claim 13 wherein the spider comprises arms each of which has a circular boss at one end each boss having an aperture, the arms being assembled with the bosses lying one on the other with the apertures registering with one another the aligned apertures receiving a screw to secure the arms together.

16. A sling type chair according to any one of the preceding claims wherein the sling comprises a rectangular sheet of fabric or plastics material.

17. A sling type chair according to any one of the preceding claims wherein releasable locking means are provided for the temporary securing together of the frame members.

18. A sling type chair as herein described with reference to and as shown in Figures 1 to 5 or Figure 6 of the accompanying drawings.

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4 SHEETS

COMPLETE SPECIFICATION

This drawing is a reproduction of the Original on a reduced scale.

SHEET 1

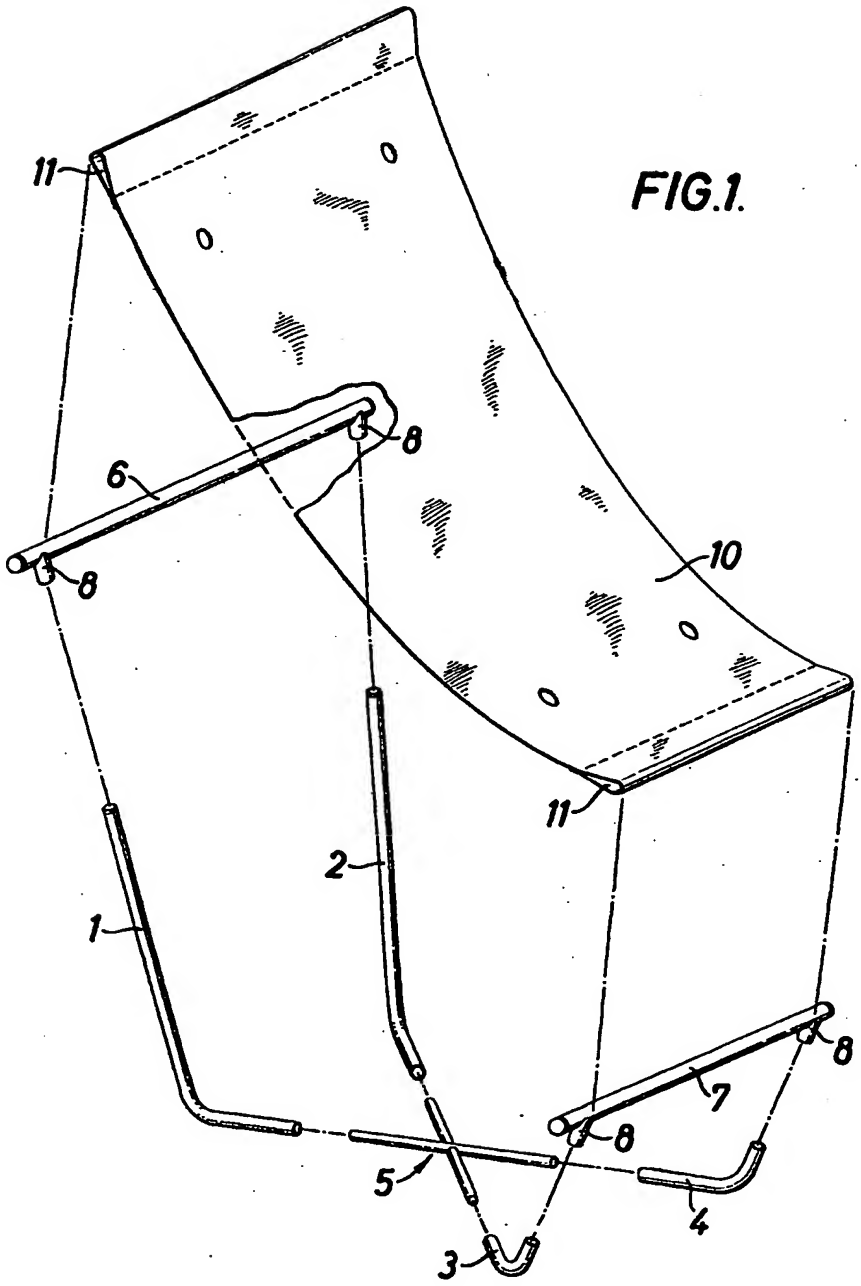

FIG.1.

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SHEET 2

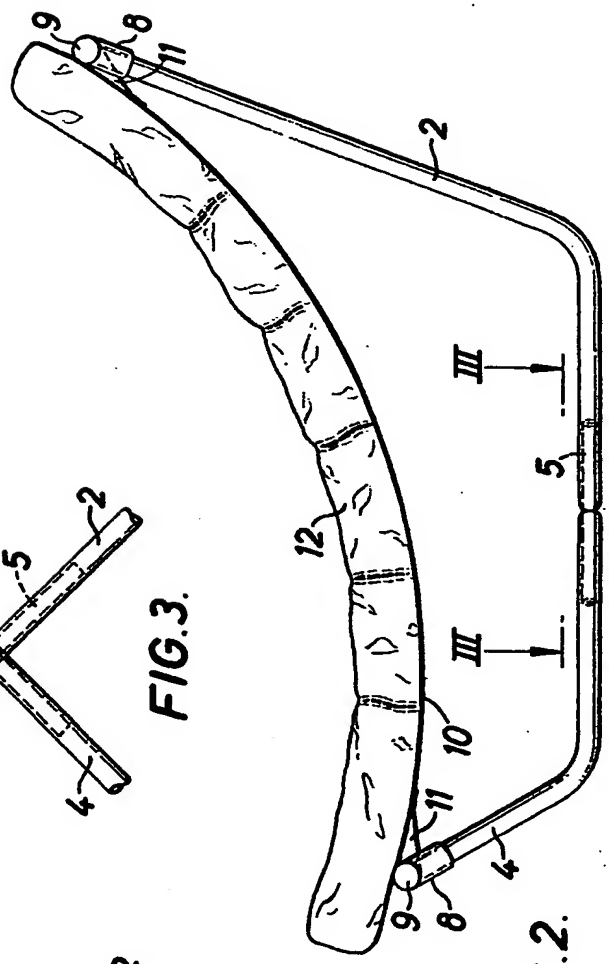

FIG.2.

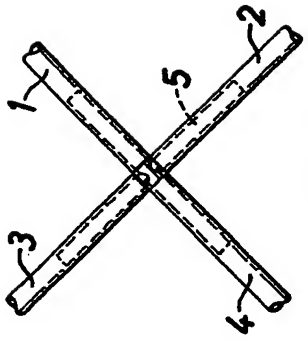

FIG.3.

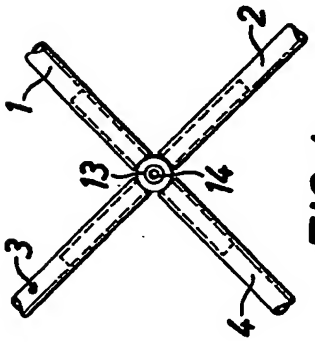

FIG.4.

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COMPLETE SPECIFICATION

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SHEET 3

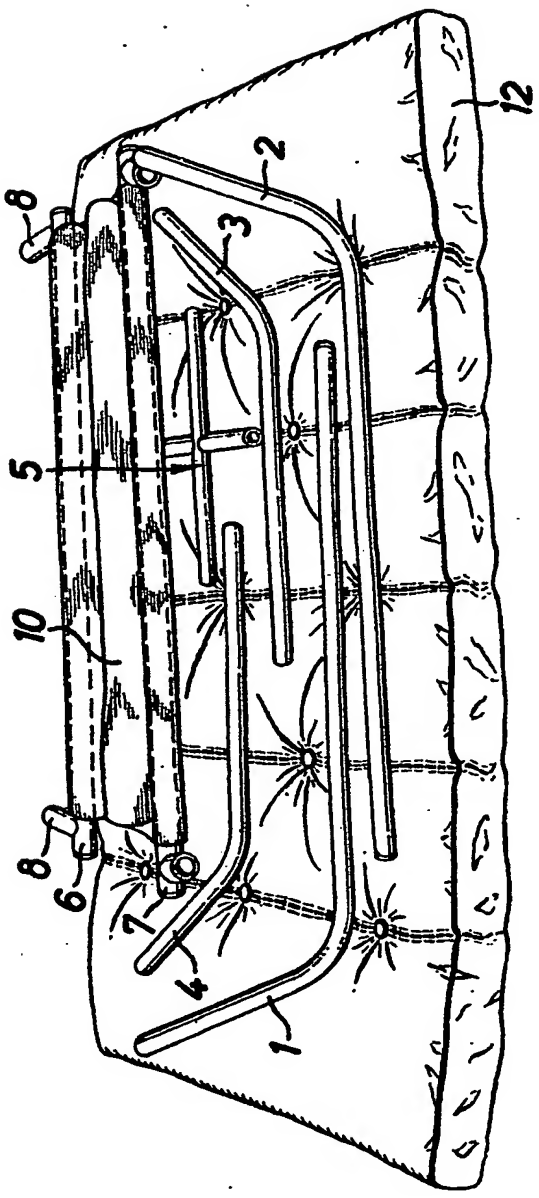

FIG.5.

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FIG.6.